

REMARKS

This is in response to the Office Action mailed October 17, 2003, in which the Examiner rejected claims 1-3 and 5 and objected to claim 4. With this Amendment, new claim 6 has been added. Reconsideration of the application as amended is respectfully requested. In Section 3 of the Office Action, the Examiner objected to claim 4 under 37 C.F.R. §1.75(c), as being dependent from a rejected base claim. With this Amendment, Applicant has rewritten claim 4 in independent form as new claim 6. Accordingly, Applicant believes that claim 6 is in condition for allowance.

I. CLAIM OBJECTIONS

In Section 4 of the Office Action, the Examiner objected to claim 1 due to an informality. With this Amendment, Applicant has corrected the error and requests that the rejection be withdrawn.

II. CLAIM REJECTIONS - 35 U.S.C. §102

In Section 6 of the Office Action, the Examiner rejected claims 1, 2 and 5 under 35 U.S.C. §102(e) as being anticipated by Fitzhenry et al. (U.S. Publication No. 2002/0184601). Applicant respectfully disagrees with the Examiner's assessment of the cited reference.

Anticipation of a claim requires a teaching of each limitation of the claim by the cited reference. See, e.g., *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) ("A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) ("The

identical invention must be shown in as complete detail as is contained in the ... claim."). Applicant respectfully believes that neither independent claim 1 nor independent claim 5 is anticipated by Fitzhenry et al., since the cited reference fails to teach each of the claimed features.

The present invention is directed to a hard macro or block having an antenna rule violation free input or output port (claim 1) and a method of defining a hard macro or block having an antenna rule violation free input or output port (claim 5). As explained in the application, hard macros or blocks are predefined circuit components that perform a desired function and can be dropped into the circuit layout design and later interconnected using a conventional routing tool. Hard macros include such elements as processors, memory arrays, input and output interface circuits, encoders, decoders, and other types of circuit blocks.

Fitzhenry et al. provide a method of preventing antenna rule violations of existing blocks or hard macros by pre-routing the ports (input/output) of the blocks "to a protective structure which takes the metal connection to the port from its original layer up to a higher metal layer." [0033] The protective structure is separate from the block or hard macro and "may be regarded as a 'halo' of fixed routing connections which surrounds the edges of the block." [0033]

Rather than providing a method of routing the ports of original blocks or hard macros to prevent antenna rule violations, the present invention is directed to a hard macro or block having an antenna rule violation free input or output port that prevents antenna rule violations from occurring altogether when used to form an integrated circuit regardless of the manner in which it is connected to other blocks. As a result, the present invention not only eliminates the need to perform checks for violations of antenna rules, but also eliminates the need to

perform fixes to the hard macro design in the manner provided by Fitzhenry et al.

The hard macro of claim 1 includes first and second conducting sections that respectively connect the gate conductor and the port level conductor to the top level metallic conductor. Such a configuration within the hard macro or block prevents antenna rule violations from occurring at the port of the hard macro. Such a hard macro is not disclosed by Fitzhenry et al. Instead, as illustrated in FIG. 2 of Fitzhenry et al., the hard macro or block B1 fails to include such routing of its gate G1 and its port P1. As a result, Fitzhenry et al. require the connection of the ports P1 of the block B1 to a halo region HR that is separate from the block B1 in order to prevent antenna rule violations. Accordingly, Fitzhenry et al. fail to disclose a hard macro that includes "an electrical connection between the port level metallic conductor and the gate conductor including a first conducting section extending from the gate conductor to the top level metallic conductor and a second conducting section extending from the top level metallic conductor to the port level conductor", as described in claim 1. If the block B1 of Fitzhenry et al. included such an electrical connection, there would be no need for the halo region HR. Accordingly, Applicant submits that Fitzhenry et al. fail to teach the hard macro or block of claim 1, and requests that the rejection be withdrawn. Additionally, Applicant submits that claims 2-4 are allowable as being dependent from allowable base claim 1.

Applicant further submits that Fitzhenry et al. fail to disclose the method of claim 5, which generally relates to a method of defining the hard macro or block described in claim 1, for the reasons set forth above. In particular, Fitzhenry et al. fail to disclose or suggest steps of "defining a first conducting section of an electrical connection extending from the gate conductor to the top level metallic conductor" and "defining a

second conducting section of the electrical connection extending from the top level metallic conductor to the port level conductor", as described in claim 5. Accordingly, Applicant submits that claim 5 is allowable and requests that the rejection be withdrawn.

III. CLAIM REJECTIONS - 35 U.S.C. §103

In Section 12 of the Office Action, the Examiner rejected claim 3 under 35 U.S.C. §103(a) as being unpatentable over Fitzhenry et al. and Applicant's admitted prior art. Applicant believes claim 3 is allowable as being dependent from allowable base claim 1, and requests that the rejection be withdrawn.

IV. 37 C.F.R. §1.131 DECLARATION

Applicant has also submitted herewith, a Declaration Under 37 C.F.R. §1.131 made by the inventors to the above-identified application, to remove Fitzhenry et al. as prior art. The Declaration, with supporting evidence in Exhibits A and B, establishes that conception of the present invention occurred prior to the alleged effective date for Fitzhenry et al. of June 4, 2001, which is established by a claim of the benefit of Provisional Application No. 60/295,008. This Declaration also establishes diligence from a date prior to the alleged effective date of Fitzhenry et al. and through June 11, 2001, the filing date of the present application. Accordingly, Applicant submits that the Declaration and the attached Exhibits show that the present invention properly antedates Fitzhenry et al. thereby removing it as prior art to the present application. Therefore, Applicant submits that the Declaration obviates the rejections of the claims of the present application that are based on Fitzhenry et al., and requests that they be withdrawn.

V.

CONCLUSION

In view of the above comments and remarks, it is believed that the present application is in condition for allowance. Consideration and favorable action is respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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